

Remarks and Arguments

Claims 1-16 were presented for examination. Claims 1-16 have been amended.

The specification was objected to because the abstract exceeded the 150 word limit. A new abstract that meets the requirements has been submitted.

In addition, the disclosure has been objected to because, on page 5, the screw has been referred to by both reference numerals “14” and “15” and, on page 7, the implant body has been referred to by both reference numerals “30” and “3”. In response, paragraph 17 on page 5 and paragraph 20 on page 7 have been amended so that the screw is consistently referred to by reference numeral “15” and the implant body is consistently referred to by reference numeral “30.”

Claims 9 and 12-16 have been objected to for improper multiple dependencies because they do not refer to previous claims in the alternative. In response, claims 9 and 12-16 have been amended to remove the multiple dependencies.

Claims 1-6 have been rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent No. 6,287,115 (Lustig.) The examiner comments that the Lustig reference discloses all of the claimed limitations.

The Lustig reference discloses a dental implant with a fixture assembly for attachment to a jaw bone, and an abutment connected to the implant fixture assembly by a fixation screw. The screw connection is such that abutment is movable on the implant fixture assembly so that the longitudinal axis of the abutment can be set at an angle to the longitudinal axis of the implant fixture assembly. For this purpose the proximal end of the implant fixture assembly comprises a semi-spherical geometry that allows a movement of the abutment relative to the implant fixture assembly within a certain range of angles as shown, for example, in Lustig Figures 1 and 15-17. Only after the abutment is set according a selected angle it is fixed in that position by the fixation screw.

Paragraph seven of the Lustig reference cites reference numerals used in Lustig Figures 41-46. Referring to these figures, fixation screw 1000 has an undercut in the form of female taper on the underside of the screw. However,

this undercut has different form and purpose than the female taper of the present application. As described at Lustig column 10, lines 16-32, the female taper forms a relatively sharp rim 1020 which engages an annular shoulder 925 of the abutment. Specifically, Lustig discloses that the abutment comprises a recess designated as a "first stage 910 of passageway 905" for the fixation screw. That recess has an annular bottom or shoulder and is wide enough to accommodate the head of the fixation screw as the abutment is moved off axis relative to the implant fixture assembly (column 10, lines 28-32). Once the proper orientation of the abutment has been established, the fixation screw is tightened so that the sharp annular rim 1020 of the fixation screw will engage the annular shoulder 925 of the abutment and securely fix the abutment in the selected orientation at the implant fixture assembly (Lustig, column 10, lines 60-67). Thus, in Lustig, the only purpose of the undercut at the underside of the screw is to form the sharp annular rim 1020 which secures the abutment in an off-axis position.

This is in contrast to the present invention in which the female taper engages a truncated cone on the implant top portion in order to longitudinally align the implant top portion and the implant body. This is recited in the claims. For example, claim 1 recites, in lines 9-18,

“...the connecting screw comprises, at the underside of the screw head, a female taper being adapted to the truncated cone of the implant top portion, the female taper and the truncated cone being brought into close contact with each other by pressure generated by the screw when the screw is tightened, whereby the truncated cone and the female taper cause a centering of the implant top portion on the implant body without exerting pressure in the direction of the periphery of the implant top portion so that a widening of the circumference of the implant top portion is prevented.”

In the Lustig reference, the dimension of the undercut in the direction of the longitudinal axis of the fixation screw length is such that it could not perform a centering of the abutment on the implant body as recited in claim 1. Thus, claim 1 patentably distinguishes over the cited Lustig reference.

Claims 2-6 are dependent, either directly or indirectly, on claim 1 and incorporate the limitations thereof. Therefore, they distinguish over the Lustig reference in the same manner as claim 1.

Claims 7 and 8 have been rejected as obvious over Lustig in view of U.S. Patent No. 5,026,280 (Durr.) The examiner comments that Lustig discloses all of the claimed elements with the exception that it does not disclose that the implant top portion is elastically deformable under pressure exerted from the screw. However, the examiner asserts that the Durr reference discloses an implant with a top portion that is elastically deformable under the action of a screw. The examiner concludes that it would have been obvious to combine the teachings of Lustig and Durr in order to mount the implant top with a resilient mounting.

The Durr reference relates to an enossal implant having a basic member 10, which is implanted into the bone of the jaw, a spacer element 12 and an elastic intermediate element 18 which is made of a plastic material, such as polyoxymethylene. The purpose of that intermediate element 18 is to provide a damping or cushioning function for the stress exerted to the implant.

The invention as defined by the claims does not have such a function, and it does not use an intermediate element made of plastic. Claim 7, which depends on claim 1 via claim 3, defines the implant top portion as being elastically deformable in the interface area (between implant body and implant top portion) which is defined in claim 3 as having a profile adapted to the cone shape of the jaw. Such a profile is not shown in either the Lustig or the Durr references. In addition, claim 7 depends on claim 1 and incorporates the limitations thereof. As discussed above, the Lustig reference does not disclose an implant assembly in which a female taper on the underside of the connecting screw engages a truncated cone on the implant top portion to longitudinally align the top portion and the implant body. No such arrangement is shown in Durr. The combination of Lustig and Durr cannot disclose what is missing in each reference. Thus, claim 7 patentably distinguishes over the cited combination of Lustig and Durr. This conclusion also applies to claim 8 which depends on claim 7.

In light of the forgoing amendments and remarks, this application is now believed in condition for allowance and a notice of allowance is earnestly solicited. If the examiner has any further questions regarding this amendment, he is invited to call applicants' attorney at the number listed below. The examiner is hereby authorized to charge any fees or direct any payment under 37 C.F.R. §§1.17, 1.16 to Deposit Account number 50-3969.

Respectfully submitted

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